

What is claimed is:

1. A semiconductor power amplifier for amplifying a high frequency signal inputted to a signal input terminal by first and second transistors connected in parallel to each other to output the amplified signal via a signal output terminal, said semiconductor power amplifier comprising:

a first capacitor element connected between said signal input terminal and an input terminal of said first transistor;

a second capacitor element connected between said signal input terminal and an input terminal of said second transistor;
and

a first impedance element connected between the respective input terminals of said first and second transistors.

2. A semiconductor power amplifier for amplifying a signal inputted to a signal input terminal by first and second transistors connected in parallel to each other to output the amplified signal via a signal output terminal, said semiconductor power amplifier comprising:

a first inductor element and a first capacitor element connected in series between said signal input terminal and an input terminal of said first transistor;

a second inductor element and a second capacitor element connected in series between said signal input terminal and an input terminal of said second transistor;

a first impedance element connected between the respective input terminals of said first and second transistors;

a third inductor element connected between an output terminal of said first transistor and said signal output terminal;
and

a fourth inductor element connected between an output terminal of said second transistor and said signal output terminal.

3. The semiconductor power amplifier according to claim 1, further comprising:

a first power amplifying section comprising said first and

second transistors, said first and second capacitor elements, and said first impedance element;

a second power amplifying section disposed separately from said first power amplifying section, said second power amplifying section including said first and second transistors, said first and second capacitor elements, and said first impedance element; and

a second impedance element connected between said first impedance element in said first power amplifying section and said first impedance element in said second power amplifying section,

wherein the respective input terminals of said first and second power amplifying sections are connected to said signal input terminal via the first and second inductor elements.

4. The semiconductor power amplifier according to claim 3, further comprising:

a third inductor element whose one end is connected to said first capacitor element in said first power amplifying section, and whose other end is connected to said first inductor element and said second capacitor element in said first power amplifying section; and

a fourth inductor element whose one end is connected to said second inductor element and said first capacitor element in said second power amplifying section, and whose other end is connected to said second capacitor element in said second power amplifying section.

5. The semiconductor power amplifier according to claim 3, further comprising:

a third inductor element whose one end is connected to said first capacitor element in said first power amplifying section, and whose other end is connected to said first inductor element;

a fourth inductor element whose one end is connected to said first inductor element, and whose other end is connected to said second capacitor element in said first power amplifying section;

a fifth inductor element whose one end is connected to said

first capacitor element in said second power amplifying section, and whose other end is connected to said second inductor element; and

a sixth inductor element whose one end is connected to said second inductor element, and whose other end is connected to said second capacitor element in said second power amplifying section.

6. The semiconductor power amplifier according to claim 2, further comprising:

a first power amplifying section comprising said first and second transistors, said first and second capacitor elements, and said first impedance element;

a second power amplifying section disposed separately from said first power amplifying section, said second power amplifying section including said first and second transistors, said first and second capacitor elements, and said first impedance element; and

a second impedance element connected between said first impedance element in said first power amplifying section and said first impedance element in said second power amplifying section,

wherein the respective input terminals of said first and second power amplifying sections are connected to said signal input terminal via fifth and sixth inductor elements.

7. The semiconductor power amplifier according to claim 6, further comprising:

a seventh inductor element whose one end is connected to said first capacitor element in said first power amplifying section, and whose other end is connected to said fifth inductor element and said second capacitor element in said first power amplifying section; and

an eighth inductor element whose one end is connected to said sixth inductor element and said first capacitor element in said second power amplifying section, and whose other end is connected to said second capacitor element in said second power amplifying section.

8. The semiconductor power amplifier according to claim 6, further comprising:

a seventh inductor element whose one end is connected to said first capacitor element in said first power amplifying section, and whose other end is connected to said fifth inductor element;

an eighth inductor element whose one end is connected to said fifth inductor element, and whose other end is connected to said second capacitor element in said first power amplifying section;

a ninth inductor element whose one end is connected to said first capacitor element in said second power amplifying section, and whose other end is connected to said sixth inductor element; and

a tenth inductor element whose one end is connected to said sixth inductor element, and whose other end is connected to said second capacitor element in said second power amplifying section.

9. The semiconductor power amplifier according to claim 1, further comprising a bias circuit for supplying a direct current bias voltage to the respective input terminals of said first and second transistors.

10. The semiconductor power amplifier according to claim 2, further comprising a bias circuit for supplying a direct current bias voltage to the respective input terminals of said first and second transistors.

11. The semiconductor power amplifier according to claim 9, further comprising a plurality of impedance elements or inductor elements connected between the respective input terminals of said first and second transistors and an output terminal of said bias circuit.

12. The semiconductor power amplifier according to claim 10, further comprising a plurality of impedance elements or inductor elements connected between the respective input terminals of said first and second transistors and an output terminal of

said bias circuit.

13. A multistage monolithic integrated circuit comprising:

a plurality of amplifiers connected in cascade,

wherein a last-stage amplifier of these amplifiers is constituted of the semiconductor power amplifier according to claim 1.

14. The semiconductor power amplifier according to claim 13, wherein a microwave signal is inputted to a signal input terminal of said last-stage amplifier.

15. The semiconductor power amplifier according to claim 13, wherein said first and second transistors are field-effect transistors by compound semiconductors or bipolar transistors by the compound semiconductors.

16. A multistage monolithic integrated circuit comprising:

a plurality of amplifiers connected in cascade,

wherein a last-stage amplifier of these amplifiers is constituted of the semiconductor power amplifier according to claim 2.

17. The semiconductor power amplifier according to claim 16, wherein a microwave signal is inputted to a signal input terminal of said last-stage amplifier.

18. The semiconductor power amplifier according to claim 16, wherein said first and second transistors are field-effect transistors by compound semiconductors or bipolar transistors by the compound semiconductors.